

CLAIMS

1. A linear light source comprising:

a square rod-shaped wiring board having a component side;

5 a plurality of light emitting elements which are arranged on the component side of the wiring board at certain intervals along the longitudinal direction of the wiring board and die-bonded thereto; and

a plurality of reflectors which are arranged at both sides of each of the light emitting elements on the component side of the wiring board such that the reflectors and
10 the light emitting elements are arranged alternately; wherein

the reflectors sandwiching the light emitting element have opposing surfaces facing each other and

the opposing surfaces of the reflectors are inclined such that the cross-sectional area of space between the opposing surfaces increases in the direction of light emitted out
15 of the light emitting element.

2. A linear light source according to claim 1, wherein

the opposing surfaces of the reflectors are rectangular or trapezoidal in shape.

20 3. A linear light source according to claim 1 or 2 further comprising

resin seal layers which are formed by filling recesses, each of which is defined by the component side of the wiring board, the light emitting element and the opposing surfaces of the reflectors arranged at both sides of the light emitting element, with a light-transmissive resin sealant.

25 4. A linear light source according to claim 3, wherein

the end faces of each of the resin seal layers contacting the wiring board and the

reflectors are mirror-finished.

5. A linear light source according to claim 3 or 4, wherein

the end faces of parts of the resin seal layers located between the opposing surfaces
5 of the reflectors are substantially flush with the end faces of the reflectors to provide a
single plane.

6. A linear light source according to claim 5 or 6 further comprising

a reflection member which is arranged on a region ranging from the end face of the
10 wiring board adjoining to the component side and extending in the longitudinal direction to
the tips of the opposing surfaces of the reflectors, the reflection member being made of a
reflection sheet or a vapor-deposited film.

7. A method for manufacturing a linear light source comprising the steps of:

15 (a) die-bonding light emitting elements which are arranged on a component side of
a wiring board at certain intervals;

(b) providing, on the component side of the wiring board, a reflector plate which is
configured such that reflectors are arranged at both sides of each of the light emitting
elements and the opposing surfaces of the reflectors are inclined such that the
20 cross-sectional area of space between the opposing surfaces increases in the direction of
light emitted out of the light emitting element;

(c) filling recesses, each of which is defined by the component side of the wiring
board, the light emitting element and the opposing surfaces of the reflectors arranged at
both sides of the light emitting element, with a light-transmissive resin sealant after the
25 steps (a) and (b); and

(d) cutting a square rod-shaped linear light source from the obtained product such
that the reflectors are arranged at both sides of each of the light emitting elements to be

arranged alternately with the light emitting elements.

8. A method for manufacturing a linear light source according to claim 7, wherein

5 in the step (d), the obtained product is cut from the back of the wiring board using a blade having a tip in the form of an isosceles triangle when viewed in section such that the square rod-shaped light source has a trapezoidal section.

9. A surface emitting device comprising:

10 a wiring board; light emitting elements electrically connected to the wiring board; and a light guide plate which captures light from the light emitting elements and emits the light from almost the entire surface thereof, wherein

the light emitting elements are die-bonded to the wiring board such that the light exit faces of the light emitting elements are parallel to the side surface of the light guide plate.

10. A surface emitting device according to claim 9, wherein the centers of the light exit faces of the light emitting elements are at the same level as the longitudinal center line of the side surface of the light guide plate.

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11. A surface emitting device according to claim 9 or 10, wherein the wiring board is shaped into a square rod corresponding to the thickness of the light guide plate and

the longitudinal axis of the wiring board is parallel to the side surface of the light guide plate.

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